DOCUMENT RESUME

ED 379 780 EA 026 527

AUTHOR Cross, Ray; And Others
TITLE Do the Influences of Effective Elementary Schools Endure?
PUB DATE Apr 94
NOTE 31p.; Paper presented at the Annual Meeting of the American Educational Research Association (New Orleans, LA, April 4-8, 1994).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Research/Technical (143)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Academic Achievement; Analysis of Variance; Criterion Referenced Tests; Educational Assessment; *Effective Schools Research; Intermediate Grades; Junior High Schools; Longitudinal Studies; Middle Schools; Norm Referenced Tests; *Outcomes of Education; *School Effectiveness; Standardized Tests

ABSTRACT

During the 1980s, considerable attention was given to the influence of "effective" elementary schools on students' school achievement. Effective schools were typically defined as those with certain characteristics that had been found to be positively correlated with student achievement scores. This paper presents findings of a longitudinal study that investigated whether students who attended effective elementary schools maintained their high achievement scores during their middle-school years. The study compared student outcomes of two elementary schools officially recognized as effective and those of two regular elementary schools in one urban school district. Graduates of all four elementary schools progressed to the same middle school. Sixth-, seventh-, and eighth-graders who had graduated from the four elementary schools were compared on the basis of achievement test scores, honor roll membership, and annual number of absences. Findings indicate that the test score advantage demonstrated by graduates of the effective elementary schools tended to dissipate as students advanced into secondary school. In addition, school status had no statistically significant effect on honor roll membership or absenteeism. Possible explanations for the results include: (1) five years of effective schooling is not enough time to make a difference in subjct matter achievement growth; (2) there is a disjuncture between elementary and secondary subject matter; (3) test scores are inadequate to measure all levels and kinds of knowledge; and (4) the research design may be flawed. Ten tables are included. (LMI)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED 379 780

DO THE INFLUENCES OF EFFECTIVE ELEMENTARY SCHOOLS ENDURE?

A paper presented to
the Annual Conference
of the American Educational
Research Association

April 8, 1994

BEST COPY AVAILABLE

Ray Cross, Texas A & M University - Corpus Christi
Jaye Garner, Corpus Christi Independent School District
Linda Kelly, Corpus Christi Independent School District
Peter Mocini, Gregory-Portland Independent School District
Raul Prezas, Corpus Christi Independent School District
Bruce Scott, Corpus Christi Independent School District
Nancy Steward, Del Mar College

EA 026 527

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

R. Cross

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

During the decade of the eighties, considerable attention was given to the influence of "effective" elementary schools on students' school achievement. Effective schools were typically defined as those that had certain characteristics which have been found to be positively correlated with student achievement scores (Bossert, Good & Brophy, Purkey and Smith). These now familiar characteristics, or "correlates," which are primarily aspects of school organization and culture, are

* High expectations for students, and a concomitant belief that all students can meet those expectations;
* Clear instructional objectives;
* School-wide emphasis on basic skills, with primary attention given to reading and mathematics;
* Close monitoring of student achievement, principally by close scrutiny of standardized test results;
* Strong principal leadership; and
* Safe and orderly school climate.

Effective Schools became a major theme among both researchers and practitioners during the past decade. Research on the validity of the correlates and attendant discussion produced a large body of literature; numerous conferences and staff development sessions featured the correlates; and many school districts officially adopted them as vehicles for school

improvement. It is not much of an overstatement to say that by the end of the 1980's, Effective Schools had acquired the status of a movement -- a movement that focused on the elementary school level because application of the correlates to secondary schools was problematic.

The critics of the Effective Schools Movement, mostly academicians, have raised the following questions concerning the conceptual and empirical underpinnings of the classic correlates:

1. The research on effective schools has relied almost exclusively on standardized achievement test scores as the criterion of school effectiveness, ignoring other important educational purposes such as promoting good citizenship, developing intellectual curiosity, and encouraging creativity (Bossert);

2. The focus on achievement test results has encouraged schools that have "joined the movement" to narrow their curricula to low level, mechanical skills that are assumed to boost achievement test scores (Stedman);

3. The findings can not be generalized beyond the urban elementary school settings in which effective schools research has predominantly been conducted (Purkey & Smith); and

4. The research on effective schools has inadequately explored the possibilities of nonlinear relationships between the independent and dependent variables (Good and Brophy).

The research being reported here is designed to address yet another issue -- one that is rarely raised and one that has not been investigated. That issue is the persistence of the effects. That is, do the high achievement test scores that students make in effective elementary schools endure throughout students'

schooling, or do they dissipate as students progress through secondary school?

Raudenbush and Bryk may have expressed the importance of the issue best in saying:

> If Dewey was correct, that education is change, educative activities influence children by changing their developmental paths. A new model for reading instruction is not intended just to add an increment to a child's reading achievement at a single point in time as if the program were like a tablet one takes to relieve a headache. Rather, the set of activities that constitute the program are implemented over a period of time for the purpose of altering the growth trajectory of each child.

The investigation being reported here attempts to assess the likelihood that two elementary schools possessing the classic characteristics of effective schools did indeed alter the growth trajectories of their students.

Setting for the Investigation

The opportunity to conduct this longitudinal study was provided by a set of fortuitous circumstances that placed two effective elementary schools, Lawnview and Ridgeway, in the same community as two other elementary schools, Conway and Winston, that could serve as comparison schools because of their demographic similarity to the two effective schools (all schools' names are fictitious). Furthermore, graduates of the four

schools, all located in an urban school district in the Southwest, progressed to the same middle school, Luther Middle School. Thus, there were built-in controls for student ethnicity and socioeconomic status, and the complexities that would have existed had graduates of the four elementary schools attended different middle schools were avoided.

The two schools identified as effective for the purposes of this study, Lawnview and Ridgeway Elementary Schools, were recognized by the United States Department of Education as National Exemplary Schools in 1985 and 1986, respectively. The criteria for receiving this recognition and their relationship to the effective schools correlates provide the justification for designating Lawnview and Ridgeway as effective elementary schools.

The receipt of the awards followed extensive procedures conducted by the Department. The faculty and administration of schools seeking the award were first required to submit an extensive application and supporting documents, which were used by a review panel of recognized educational leaders to recommend schools that were to receive site visits. The two-day site visits were conducted by experienced professionals who had experience with long-term school improvement projects and who had experience and/or training in organizational evaluation and research. The Secretary of Education then made the awards based on the recommendations of the review panel and site visitors.

In as much as the decisions leading to the award stemmed from evidence relative to the questions on the original applications submitted by the schools, the relationship of those questions to the effective schools correlates provide the foundation for the schools in this study being designated as effective elementary schools. This relationship is revealed below by placing the questions from the application under the relevant correlate.

* Correlate I. High expectations for students, and a concomitant belief that all students can meet those expectations

1. Describe the school's mission statement or educational philosophy.

2. Describe the climate of your school. What has been done to create and sustain this climate?

3. Describe strategies used to ensure that parents and other members of the community understand what the school expects of them and to ensure that school staff understand what parents and community members expect in return.

4. Describe how the building leaders convey high expectations for teachers and students.

* Correlate II. Clear instructional objectives

1. What are the essential school-wide instructional goals in English, mathematics, science, history, geography, the arts, economics, and other subjects that the state and school system deem appropriate?

2. Describe prevalent instructional techniques, strategies, and approaches used in your school. Describe how they relate to curricular objectives and research-based principles of learning.

* Correlate III. School-wide emphasis on basic skills, with primary attention given to reading and mathematics

1. How does the instructional program ensure that children are developing the basic skills and the higher order cognitive skills necessary to function effectively in our society?

2. Describe opportunities for parents to be involved in the instructional program of their children. (Lawnview qualified for the Exemplary School Recognition Award on the basis of the students' standardized test scores in the areas of reading, language, and mathematics.)

* Correlate IV. Close monitoring of student achievement, principally by close scrutiny of standardized test results

1. Describe procedures for measuring and monitoring student progress. How are students and parents informed of progress and what practices facilitate appropriate adjustments in classroom instruction?

2. What procedures exist to evaluate the overall success of your school?

3. What strengths and weaknesses were identified in the most recent evaluation? What changes were made to improve your school as a result of the evaluation?

* Correlate V. Strong principal leadership

1. Describe ways in which the principal or other building leaders inspire teachers, parents, and students to accomplish the school's mission and demonstrate skills that enable the school to reach its goals.

2. Describe how the building leaders convey high expectations for teachers and students.

3. Describe how building leaders involve teachers in decision making regarding the organization and operation of the school.

* Correlate VI. Safe and orderly school climate

1. Describe the climate of your school. What has been done to create and sustain this climate?

2. Summarize your school's overall approach to discipline. Describe any special procedures or programs used to maintain order and discipline throughout your school. What factors contribute most to order in your school?

Research Design

The research design will be described in terms of subjects for the study, the independent variable, dependent variables, and data analysis.

Subjects

Subjects of the study were sixth, seventh and eighth grade students who attended Luther Middle School in 1992-93 and who were graduates of either Lawnview, Ridgeway, Conway, or Winston elementary schools. Sixth grade students, who had not yet taken standardized achievement tests in middle school, were included for only the portion of the study concerning honor roll membership. To be designated as a "graduate" of one of those schools, a student must have had at least five years of his or her elementary school experience at that school. The student bodies of the four elementary schools are quite homogeneous with respect to ethnicity and socioeconomic status. At the time students in this study attended their respective elementary schools, the ethnic composition of each of the four schools was

in excess of 90% Hispanic. The most recently available data indicate that the percentage of students on free or reduced lunch is 89% for Lawnview, 89.4% for Ridgeway, 83.5% for Conway, and 91.8% for Winston. Student ethnicity and socioeconomic status are therefore not considered to be factors in the study.

Independent Variable

The independent variable is the elementary school of which the student is a graduate, as defined in this study. Of principal interest is whether the elementary school is an effective school or a comparison school. Lawnview and Ridgeway were the effective schools, based on the previously discussed rationale, and Conway and Winston were the comparison schools.

Dependent Variables

Dependent variables in the study are as follows:

* Norm referenced achievement test scores for grade one through the 1992-93 school year (reading and math);
* Criterion referenced achievement test scores for grades one, three, five, and seven (reading and math);
* Honor roll membership in Luther Middle School for the first four reporting periods of the 1992-93 school year; and
* Annual days of absence in elementary school and annual days of absence in middle school.

Statistical Analyses

Achievement Scores - Analysis of variance was used to test for differences in norm referenced and criterion referenced test scores among the four schools. Two sets of comparisons were made, one for the students who were in the 8th grade during the 1992-93 school year and one for students who were in the 7th grade during that same year.

Comparisons of scores were first made for each year, beginning with first grade tests and extending through the test results that were available at the time the study was conducted (February-March, 1993). Analyses of scores from the elementary school years were conducted to verify that the graduates of effective elementary schools did indeed have the higher measures while they were in elementary school. While existing data indicate that the mean achievement test scores for all students of Lawnview and Ridgeway were generally above those of the comparison schools throughout the late 1980's, the students whose scores were analyzed for this study did not comprise the complete population of students who attended those schools during that period. This is due, of course, to student attrition through mobility. Examination of trends in the differences among scores for the four schools over several years provided a longitudinal aspect for the analyses.

Honor roll membership - Analysis of Luther Middle School

honor roll membership was by means of chi-square tests, with the question being whether the graduates of the effective schools were represented on the honor roll in greater proportions than were graduates of the comparison schools.

Absenteeism - Absenteeism was analyzed by means of analysis of variance to determine whether there were significant differences among the four schools with respect to annual absences in elementary school and annual absences during middle school.

Limitations of the Study

The limitations of the study result primarily from the longitudinal nature of the investigation and the consequent uniqueness of the students who met the criterion for inclusion as subjects. Students who remained in the same elementary school for five years or more and who continued in the middle school fed by their respective elementary schools are likely to have a stability that makes them different from their more mobile peers. They do not, therefore, constitute a representative sample from their respective elementary schools. It is important to note that the samples of students from both the effective and comparison schools were equally stable.

The small number of students who qualified as subjects for

the study also complicates the interpretation of results. For example, in a small sample one or two extreme scores can skew a mean score considerably. If one or two students "goofed off" on the test on a given day, a misleading group mean could result.

For the above reasons, it is well to attend more to general patterns in the data than to a particular mean score or set of means for a given year.

Definition of Terms

For purposes of clarification, definitions of special terms that will be used in this report are as follows:

Effective schools - elementary schools so designated as exemplary by the U. S. Department of Education based on criteria related to the classic effective school correlates.

Comparison schools - elementary schools which are similar to the two effective schools in this study with respect to ethnicity and socio-economic status, and which feed into the same middle school, and are used for purposes of comparison of achievement test scores, absenteeism, and middle school honor roll membership.

Graduate (of a given elementary school) - A student who spent at least five complete years of his/her elementary school experience in that school.

Eighth grade cohort - Students who were enrolled in the eighth grade at Luther Middle School during the 1992-93 academic year and who are graduates of one of the four schools in the study.

Seventh grade cohort - Students who were enrolled in the seventh grade at Luther Middle School during the 1992-93 academic year and who are graduates of one of the four schools in the study.

Sixth grade cohort - Students who enrolled in the sixth grade at Luther Middle School during the 1992-93 academic year and who are graduates of one of the four schools in the study (included in the study only for the portion concerning honor roll membership).

Norm referenced achievement test - A test yielding scores based on comparisons among the population of students who have taken the test. For the seventh grade cohort, the norm referenced tests were the California Achievement Test (CAT) in the first through fifth grades and the National Academic Performance Test (NAPT) in the sixth grade. For the eighth grade cohort, the norm referenced tests were the CAT in the first through sixth grades and the NAPT in the seventh grade. Scores in student folders for CAT were expressed as scale scores and for NAPT as normal curve equivalents.

Criterion referenced tests - State required tests administered at odd-numbered grades through 1992, with the content of the test being based on defined subject matter taught in the Texas public schools.

Data Collection

Students who qualified for the study were identified by examination of school district student attendance records. These records show the number of days of attendance and the school of attendance for each student for each year of enrollment in the school district. A computer printout of these records for students at Luther Middle School permitted the identification of students who had attended one of the four schools for at least five years and who therefore met the criterion for inclusion in the study.

These same printouts provided data necessary for the

analysis of absentee records of the students. The absentee data of interest were the annual number of days of absence from first grade through the year prior to the year in which the absentee data were collected.

Test score data were collected from the folders of students who met the criterion for inclusion in the study. Achievement test scores collected for the seventh grade were for grades one through six for the norm referenced tests and for grades one, three, five, and seven for the criterion referenced tests. Test data collected for the eighth grade were for grades one through seven for the norm referenced test and for grades one, three, five, and seven for the criterion referenced tests.

Honor roll data for the first four six-week reporting periods of the 1992-93 school year were collected from honor roll membership lists provided by Luther Middle School.

Results

Results of the study will be reported under the headings of norm referenced achievement tests, criterion referenced achievement tests, honor roll membership, and absenteeism.

Norm Referenced Scores

Norm referenced achievement reading test data for the 8th grade cohort are presented in Table 1. Mean scores of graduates of each school are presented along with the number of students' scores from which the mean was derived. The number varies from one grade to the other because of students who missed the test from year to year. Means through grade six are based on scale scores, while means for grade seven are based on normal curve equivalents. In the final column is the probability value yielded by an analysis of variance (Anova) of scores for that grade.

Table 1

Norm Referenced Reading Scores, Grades 1-7
8th Grade Cohort

	Lawnview		Ridgeway		Conway		Winston		Anova Stat.
Grade Level	Mean	No.	Mean	No.	Mean	No.	Mean	No.	Signif.
Grade 1	539	22	598	29	516	32	473	21	.000
Grade 2	680	22	672	29	609	30	596	19	.000
Grade 3	719	22	711	29	681	31	677	19	.002
Grade 4	703	22	714	29	694	31	689	18	.040
Grade 5	728	21	724	29	714	31	711	19	.092
Grade 6	739	22	739	29	729	30	714	21	.024
Grade 7	42	21	41	29	41	30	35	16	.563

As may be seen, there are highly significant differences

through grade three, with the differences favoring the effective schools. In grades four through six, there are still statistically significant differences among the graduates of the schools, but the differences are of a smaller magnitude than in grades one through three. In grade seven, there are no significant differences among the schools, although graduates of Winston's scores are somewhat lower than the remaining schools. The dramatic difference in the magnitude of scores between grade six and seven is due to a change in the metric of score reporting with the introduction of the NAPT test in 1992. Student scores on the CAT were reported as scale scores, while their scores on the NAPT are reported in Normal Curve Equivalents (NCE's).

An interesting pattern in Table 1 is the yearly increase in the scale scores through grade six. With few exceptions the mean scale score for graduates of each of the four schools in each year exceeds the mean scale score for the previous year. Since scores from the norm referenced test are comparable across grades, the increase suggests improvements in the students' reading and mathematics achievement over time.

Mean scores and numbers of test takers for the math norm referenced tests for the eighth grade cohort are presented for graduates of each of the four elementary schools in Table 2. The pattern of data in this table is similar to that for norm referenced reading.

Table 2

Norm Referenced Math Scores, Grades 1-7
8th Grade Cohort

	Lawnview		Ridgeway		Conway		Winston		Anova Stat.
Grade Level	Mean	No.	Mean	No.	Mean	No.	Mean	No.	Signif.
Grade 1	552	22	620	29	551	32	514	21	.010
Grade 2	710	22	679	29	646	30	639	19	.005
Grade 3	760	22	738	29	718	31	723	18	.001
Grade 4	744	22	756	28	740	31	722	18	.011
Grade 5	767	21	774	29	754	31	761	18	.139
Grade 6	762	22	753	29	746	31	750	19	.414
Grade 7	48	21	46	29	45	29	44	17	.955

Differences among schools are more pronounced in grades one through three than in grade four, and the differences among schools become statistically insignificant by grade five. Again, there is a general pattern of increase in scale scores for all four schools with increasing grade levels, although the pattern is not as clear for mathematics as it is for reading.

Data for norm referenced reading for the seventh grade cohort are reported in Table 3. The pattern is similar to, but weaker than, the pattern for norm referenced reading for the 8th grade cohort.

Table 3

Norm Referenced Reading Scores, Grades 1-6
Seventh Grade Cohort

	Lawnview		Ridgeway		Conway		Winston		Anova Stat.
Grade Level	Mean	No.	Mean	No.	Mean	No.	Mean	No.	Signif.
Grade 1	572	22	601	33	538	47	534	20	.004
Grade 2	653	23	660	31	637	46	658	20	.046
Grade 3	717	21	715	32	690	46	689	19	.019
Grade 4	694	23	709	30	686	45	697	21	.057
Grade 5	719	23	713	32	718	48	718	21	.864
Grade 6	39	23	33	29	41	44	41	19	.144

The graduates of effective schools generally have higher scores through the third grade, and the differences are statistically significant. By the fourth grade, however, the mean scores become similar; by the fifth grade the graduates of the four schools are virtually the same, and by the sixth grade, the comparison school means are higher. There was once more a pattern of increase in scale scores for all four schools through the elementary school years, but this time the rate of improvement for the comparison schools surpassed that of the effective schools.

Norm referenced math scores for the 7th grade cohort are presented in Table 4. The data in this table present a picture that is somewhat different from that shown in previous tables.

Table 4

Norm Referenced Math Scores, Grades 1-6
Seventh Grade Cohort

Grade Level	Lawnview Mean	Lawnview No.	Ridgeway Mean	Ridgeway No.	Conway Mean	Conway No.	Winston Mean	Winston No.	Signif.
Grade 1	567	22	629	33	558	47	552	19	.000
Grade 2	699	23	675	31	669	46	674	21	.121
Grade 3	742	23	727	32	715	46	731	21	.019
Grade 4	729	23	752	30	725	45	748	21	.003
Grade 5	760	23	754	32	744	48	770	21	.003
Grade 6	41	23	40	30	44	44	49	19	.356

With the exception of the second grade, there are statistically significant differences among graduates of the four schools through the fifth grade. This time, however, the graduates of the effective schools do not consistently hold the advantage. Graduates of Winston had the highest mean score in the fourth, fifth, and sixth grades, although the differences among schools is not significant at the sixth grade level.

Criterion Referenced Test Scores

Criterion referenced test scores are those that have been required since the passage of a state mandate during the early 1980's. These scores are recorded as scale scores in student

records, but the scores are not comparable across grade levels. It is possible to validly compare scale scores for different groups for the same year, however, which is the important consideration in this study. A revision of the state's criterion referenced test introduced in the 1990-91 school year is reported in a different scale, resulting in scores of a higher magnitude on the seventh grade test for the eighth grade cohort and on the fifth and seventh grade tests for the seventh grade cohort. The number of test takers of criterion referenced tests is somewhat reduced from the number who took norm referenced tests because of the exemptions of special education students from taking the criterion referenced tests.

Criterion referenced reading scores for the 8th grade cohort are presented in Table 5.

Table 5

Criterion Referenced Reading Scores, Grades 1,3,5,7
Eighth Grade Cohort

	Lawnview		Ridgeway		Conway		Winston		Anova Stat.
Grade Level	Mean	No.	Mean	No.	Mean	No.	Mean	No.	Signif.
Grade 1	903	13	919	18	787	09	821	09	.009
Grade 3	920	21	889	26	795	27	790	14	.000
Grade 5	822	21	859	25	770	31	774	17	.000
Grade 7	1442	20	1544	25	1448	28	1448	17	.243

The reading scores for graduates of Lawnview and Ridgeway were significantly higher than those of graduates of comparison

schools through the fifth grade. The differences among graduates of the elementary schools are not statistically significant in the 7th grade, although Ridgeway graduates had a mean scale score approximately 100 points higher than any of the other schools.

In Table 6, the now familiar pattern of scores is repeated, with the exemplary schools enjoying a clear advantage in the elementary grades, with the advantage largely dissipating in the 7th grade.

Table 6

Criterion Referenced Math Scores, Grades 1,3,5,7
Eighth Grade Cohort

	Lawnview		Ridgeway		Conway		Winston		Anova Stat.
Grade Level	Mean	No.	Mean	No.	Mean	No.	Mean	No.	Signif.
Grade 1	916	13	985	19	903	09	842	09	.009
Grade 3	931	21	921	26	836	27	844	14	.001
Grade 5	889	21	883	26	818	31	807	17	.000
Grade 7	1474	20	1493	26	1457	29	1456	18	.876

Criterion referenced scores for the seventh grade for reading and math are shown in Table 7 and Table 8, respectively. The pattern for the reading scores is somewhat mixed, although again, there are no significant differences among the fifth grade or the seventh grade reading scores of the seventh grade cohort.

Table 7

Criterion Referenced Reading Scores, Grades 1,3,5,7
Seventh Grade Cohort

	Lawnview		Ridgeway		Conway		Winston		Anova Stat.
Grade Level	Mean	No.	Mean	No.	Mean	No.	Mean	No.	Signif.
Grade 1	819	12	935	26	832	40	821	16	.000
Grade 3	906	21	917	28	833	43	828	20	.000
Grade 5	1537	18	1560	23	1498	40	1511	16	.445
Grade 7	1451	18	1399	27	1405	47	1428	18	.695

Table 8

Criterion Referenced Math Scores, Grades 1,3,5,7
Seventh Grade Cohort

	Lawnview		Ridgeway		Conway		Winston		Anova Stat.
Grade Level	Mean	No.	Mean	No.	Mean	No.	Mean	No.	Signif.
Grade 1	827	12	937	26	866	40	884	16	.032
Grade 3	919	21	917	23	848	43	913	20	.005
Grade 5	1536	18	1694	28	1456	40	1544	17	.000
Grade 7	1410	18	1453	26	1412	45	1434	19	.663

Summary of Achievement Test Score Analyses

There is a pattern to the norm referenced and criterion referenced scores for both cohorts in reading and mathematics.

This pattern reflects a statistically significant advantage for the graduates of the two effective schools in earlier grades, an advantage that largely disappears during the middle school years. While there are a few exceptions to the general pattern, the trend is clear. The trend of the scale scores for the California Achievement Test in the elementary grades was for an improvement with advancing grades in all four schools.

Honor Roll Membership

Could it be that teachers' evaluations of student learning might capture elements that are missed by standardized tests? An analysis of honor roll representation was conducted to assess that possibility.

A chi square analysis of Luther Middle School honor roll membership of graduates of the four elementary schools for the first four reporting periods of 1992-93 is presented in Table 9. This table shows the number of students who are graduates of Lawnview, Ridgeway, Conway, and Winston and the number of these students who were on the honor roll for each of the first four reporting periods of the 1992-93 school year. The table also shows the percentage of each elementary school's representation in the total sample from the four schools and the percentage of each school's representation in the four elementary schools' total membership on the middle school honor roll. Honor roll students who were not graduates of any of the four schools were

excluded from the analysis. Accompanying each section is a chi-square test to determine whether the graduates of the four schools are represented on the honor roll proportionately to their membership in the sample as a whole. Within the table are four sections, one for each of the reporting periods.

As a review of Table 9 discloses, the chi-square test does not reach statistical significance for any of the reporting periods, indicating that the graduates are represented on the honor roll commensurately with their membership in the sample.

Table 9

Results of Analysis of Honor Roll Membership
First through Fourth Reporting Periods, 1992-93
Luther Middle School

First Reporting Period

Grade Level	Lawnview	Ridgeway	Conway	Winston
Grade 6	08	14	15	10
Grade 7	10	07	18	06
Grade 8	05	12	12	06
on honor roll	23	33	45	22
# in sample	72	89	114	70
% honor roll sample	19	27	39	18
% of sample	21	26	33	20

Chi square = .848 / p = .84

Second Reporting Period

Grade Level	Lawnview	Ridgeway	Conway	Winston
Grade 6	10	13	07	03
Grade 7	04	06	13	03
Grade 8	07	08	10	05
# on honor roll	21	27	30	11
# in sample	72	89	114	70
% honor roll sample	24	30	34	12
% of sample	21	26	33	20

Chi square = 3.18 / p = .36

Third Reporting Period

Grade Level	Lawnview	Ridgeway	Conway	Winston
Grade 6	09	16	10	05
Grade 7	05	09	14	03
Grade 8	04	11	09	06
# on honor roll	18	36	33	14
# in sample	72	89	114	70
% honor roll sample	18	36	33	14
% of sample	21	26	33	20

Chi square = 4.779 / p = .19

Fourth Reporting Period

Grade Level	Lawnview	Ridgeway	Conway	Winston
Grade 6	09	11	08	03
Grade 7	06	06	12	04
Grade 8	06	12	08	06
# on honor roll	21	29	28	13
# in sample	72	89	114	70
% honor roll sample	23	32	31	14
% of sample	21	26	33	20

Chi square = 2.623 / p = .454

Absenteeism

In Table 10 are mean yearly days of absence of graduates of the four schools during their elementary school and middle school experience.

Table 10

Mean Number of Annual Absences of Graduates
Elementary School and Middle School

	Lawnview	Ridgeway	Conway	Winston	Anova pvalue
Mean Number of Absences, Elem. School, Grades 1-5 8th Grade Cohort	4.2	1.8	4.8	4.4	.003
Mean Number of Absences, Middle School, 8th Grade Cohort	9.5	3.4	6.9	7.3	.046
Mean Number of Absences, Elem. School, Grades 1-5 7th Grade Cohort	2.9	1.8	4.0	4.6	.002
Number of Absences, Middle School 7th Grade Cohort (1 year only)	8.6	9.5	6.0	7.0	.219

A noteworthy feature of the data in Table 10 is the low number of absences of the Ridgeway graduates while they were in elementary school, 1.8 mean days per year for both the eighth grade cohort and the seventh grade cohort. The low number of absences of Ridgeway graduates accounts for the statistically significant Anova p. value for differences among both elementary school

absences and middle school absences of the 8th grade cohort. This would seem to give some hope that good habits learned in the elementary years have carried over to the middle school years. However, this hope is weakened by the data for the 7th cohort, which shows no such carryover, even though the Ridgeway graduates had a significantly lower number of absences during their elementary school years.

Conclusions

On the basis of the foregoing analyses of achievement test scores, honor roll membership, and records of absences, the following conclusions are offered:

1. During their elementary school years, the graduates of the effective schools consistently had norm referenced and criterion referenced achievement test scores that were higher than graduates of the comparison schools at a level of statistical significance; however, the differences between graduates of the effective schools and graduates of the comparison schools tended to fade in the upper elementary grades and were no longer statistically significant in the middle school grades.

2. Graduates of the effective elementary schools were not disproportionately represented on the middle school honor roll in comparison with the other two elementary schools.

3. There were statistically significant differences in absenteeism among the graduates of the four elementary schools, but the differences were not associated with effective or comparison school status. The graduates of Ridgeway had notably low absenteeism during their elementary school years, a trend that carried over for the Ridgeway ex-students in the eighth grade cohort, but not for the Ridgeway graduates in the 7th grade cohort.

4. Norm referenced CAT results generally revealed a progressive improvement in test scores of graduates of all four elementary school as they advanced from grade to grade during their elementary school years. Because of the change to the NAPT test in 1990 and the incomparability of scores from that test with CAT scores, it is not known whether the graduates continued the improvement in norm-references scores in the middle schools.

Discussion

The tendency of the test score advantage of the graduates of the two effective elementary schools to dissipate as the graduates advanced into secondary school suggests that their reading and mathematics growth trajectories were not altered by their attendance at elementary schools having the classic characteristics of

effective schools. Of course, one must add, "at least in terms of their standardized achievement test scores to this point." As research on Head Start has demonstrated, advantages from participation in educational programs may not all be manifested in the results of standardized achievement tests. Subsequent research should be undertaken with the subjects of this study to see if advantages for the students are later revealed in more advanced high school course taking, lower drop out rates, and higher rates of participation in post secondary education.

What explanations might be advanced for the disappearance of the test score advantage for these graduates of two effective elementary schools? One possibility is that five years of effective schools is not enough to alter trajectories in subject matter achievement growth. It may be that the aspects of school culture and organization that promoted the achievement score advantage in the earlier grades must be continued into the middle school years to maintain the advantage.

A second possibility lies in the disjuncture between the subject matter of the early grades and that of the secondary level. The growth in the narrow skill learnings of the early grades in effective schools may have limits as a foundation for the broader, more complex subject matter associated with the secondary level.

Finally, the explanation may be found in a flaw in the design of the investigation. The tendency for the norm referenced test score means of all four schools to increase from year to year suggests that the comparison schools may also have been "effective schools," even though they had not been officially recognized as exemplary school by the U.S. Office of Education.

It seems likely that the search for characteristics of effective schools is a never-ending one. Questions regarding the durability of effects, issues of context, and the questions of the value of effects are probably not answerable to any definitive degree. Rather, it seems that the search for "effective school correlates" is simply another manifestation of the search for better means of educating children and young people that has always gone on and always will.